

**Report of Participation in 21st IEEE International Symposium on Industrial Electronics (ISIE2012) held in Hangzhou, China, from May 28 to May 31, 2012.**

**David Solomon George**

**Associate Prof. in ECE**

ISIE is an international conference for presentation and discussion of the state of art in Industrial Electronics and related areas. It is a prestigious conference organized by Industrial Electronics Society of IEEE (Institute of Electrical and Electronics Engineers), which is the premier professional body in the field of Electrical and Electronics Engineering. The research papers were selected after blind peer review process. The details of the conference are available in the website [www.isie2012.com](http://www.isie2012.com). The accepted papers are published in IEEE Proceedings and are included in IEEE Xplore after the papers are presented.

ISIE2012 had seven technical tracks and fifteen special sessions. There were a total of 509 submissions sent from 49 Countries, from which 333 high-quality papers were accepted in the proceedings after peer reviews. Besides technical sessions during the conference, five world-renowned technical leaders - Prof. Fred C. Lee, Virginia Tech, USA, Prof. Jian Chu, Zhejiang University, China, Prof. Kouhei Ohnishi, Keio University, Japan, Prof. Frede Blaabjerg, Aalborg University, Denmark, and Dr. Gourab Majumdar, Mitsubishi Electric Corporation, Japan presented plenary speeches. They shared their insights into new trends in industrial electronics.

Tutorials by field experts have been arranged to equip engineers, researchers, and students with the latest knowledge in power electronics, renewable energy, smart grid, and control. Participation by various industry sponsors, Mitsubishi Electric & Electronics, Fuji Electric, RS Components, Delta Electronics, Silergy and Xiamen Kehua Hengsheng in ISIE benefited the participants.

I have presented two papers and the comments received were encouraging and enlightening. The time spent in the conference with the international delegates was helpful in understanding the state of art research in this area.

As a part of academic visit, Zhejiang University was visited and the research work in various laboratories was observed. Active research is being done in the area of power

electronics and robotics in this university. The research ambience in the university was commendable. The overall exposure received through tutorials, key note addresses, research paper presentations and interaction with researchers from reputed institutions are worth mentioning.

The experience in the conference is shared with the faculty and M. Tech. students in the department. All faculty and 18 PG students attended the session. Steps are being taken to publish the experience in the institution web site. The research activities are expected to continue. Proposal for Center of excellence is being prepared with myself as the Co-coordinator. The inputs received through this international experience will definitely help in my future directions of research.

## ICEMS 2012 - SHARING OF EXPERIENCE

**Jiji K S**

**Assistant Professor in EEE**

The International Conference on Electrical Machines and Systems (ICEMS) is an annual event for paper presentation and discussion on latest developments in the field of Electrical Machines and related areas, jointly organized by IEEE – IAS chapters of Japan, Korea and China. It is a prestigious conference organized by IEEJ Industry Applications Society, co-sponsored by the Korean Institute of Electrical Engineers (KIEE) and the China Electro-technical Society (CES), and is also technically co-sponsored by the IEEE Industry Applications Society (IEEE-IAS) and the papers are selected after blind peer review process. The conference offers ample opportunity for the researchers and professionals from all over the world to present their latest research inferences and also facilitates exchange of new ideas and experiences in the fields of electrical machines and systems such as motor drive systems, turbine generators, linear machines, transformers, electric vehicles, renewable energy, power converters, etc. The details of the conference are available in the website [www.icems2012.com](http://www.icems2012.com). The **presented papers shall be published in any** one of the journals like Journal of International Conference on Electric Machines and Systems, IEEJ Journal of Industry Applications or IEEE Transactions on Industry Applications, based on the recommendations by the reviewers and the session chairs.

The 15<sup>th</sup> International Conference on Electrical Machines and Systems (ICEMS 2012) was organized by the IEEE Industry Applications Society of Japan and was held in Sapporo, Japan, from October 21 to 24, 2012. Researchers from 27 countries participated in the conference and there were a total of 404 poster presentations and 103 oral presentations selected from a total of 2076 entries received. There were 4 special lectures by eminent researchers as detailed below.

1. “A massive integration of renewable energy into smart grid in Japan” by Prof. A. Yokoyama, University of Tokyo, Japan.
2. “Smart grids – A key step to energy efficient cities of the future” by **Prof. Ronnie Belmans**  
Katholieke Universiteit Leuven, Belgium.

3. “Future Power Grid and High Tc Superconducting Power Transmission”, Prof. Liye Xiao, Chinese Academy of Sciences, China.
4. “Bearingless PM Motor Levitation Systems “, **Prof. Andreas Binder**, Darmstadt University of Technology, Germany.

The conference focused on researches related to all relevant areas of Electric Machines and Controls and there were 7 sessions dedicated for presentations on “PM Machines and Drives”, 2 each on Special Machines, Induction Motors and Controls and Power converters, Sessions on Switched Reluctance Machines and Drives, Wind Turbine generators, Hybrid vehicles, Machines for Railway technologies, High Voltage and Power Transformers, Synchronous Machines, Ultrasonic Motors etc.

The paper presentation in ICEMS 2012 was a memorable experience and my paper titled “**FEM based design of third harmonic excitation system for low voltage salient pole synchronous generators**” was included in the session for “Synchronous Machines and Controls” and the chair of the session was a senior engineer from Hitachi Corporation, world leaders in Turbo Alternators. The presentation was an interactive one with the audience and the session chair querying about the application of third harmonic excitation system, especially related to implementation of the idea in High Voltage Turbo Generator Systems, the cost factor for introducing new winding etc. Based on the suggestions from the co-presenters and the session chair I have incorporated certain modifications in the final experimental machine and same is under development. After validation of the new machine, I will be able to conclude and submit my Ph D thesis.

The different paper presentation sessions were held simultaneously in 5 different venues and presentations related to my area of research like permanent magnet motors, BLDC motors etc. were attended and interacted with the presenters.

Out of various papers presented in ICEMS 2012, few papers selected by the reviewers and the session chairs are recommended for review and publication in IEEE transactions on Industry Applications and my paper also has been included in this, as per the e mail notification received from the ICEMS programme committee.

On return from Japan, the experience gained from the conference was shared with the fellow faculty members in the department and a seminar on the topic was presented to the students of the department.

Subsequently, I had attended a workshop on “Design, Simulation and Analysis of Brushless Permanent Magnet Motor” at PSG College of Technology, Coimbatore during 9th and 10<sup>th</sup> November 2012. As part of continuing my research work I am guiding the following student projects.

1. “Design, Analysis and Development of BLDC motor for railway applications” in association with Kerala Electrical & Allied Engineering Co. Ltd., (KEL), Kundara, Kollam, a government owned company manufacturing electrical machines. This machine is being developed as drive for fans in railway coaches. The design and FEA analysis of the machine is completed and the prototype development is in progress.
2. “Sensorless control of BLDC motor using back emf detection method” – PG thesis work.

## **International Conference for Future Environment and Energy**

**(ICFEE 2013) Rome, Italy, 24<sup>th</sup> - 25<sup>th</sup> February 2013**

**Bindhu B K**

**Assistant Professor in CE**

The 3rd International Conference on Future Environment and Energy-ICFEE 2013 was the premier forum for the presentation of new advances and research results in the fields of Environment, Energy, Climate Change and Humanity. The conference could bring together leading researchers, engineers and scientists in the domain of interest from around the world. The conference provided a chance to keep us up-to-date with the latest advancements in these fields and to present our research in a unique forum, and to collaborate with experts from all around the world. The details of the conference are available in the website <http://www.icfee.org/>. This conference is supported by Asia-Pacific Chemical, Biological & Environmental Engineering Society (APCBEES). The mission of APCBEES is to foster and conduct collaborative interdisciplinary research in state-of-the-art methodologies and technologies within its areas of expertise.

As my paper was accepted, it was published in JO CET (Journal of Clean Energy Technologies) (ISSN: 1793-821X) as one volume (Vol.1, No. 2, March 2013: pp 84-86.), and was included in Engineering & Technology Library, EBSCO, and Ulrich's Periodicals Directory. Hope it will facilitate completion of the Ph.D program of the prospective presenter.

Our institution is offering many core papers and electives in the area of environmental engineering. The conference ICFEE 2013 was particularly related to the area of conservation of energy and environment. The paper I presented was focusing on the biological treatment of wastewater, which is a thrust area in the BTech curriculum. By attending the conference, I got an opportunity to interact with global environmental experts and international research community who have got ample experience and expertise in the field of environmental engineering and sustainable development and those who have exposure to the latest developments in the area. The knowledge gained through these interactions help me to improve the quality of my teaching.

As per the e-mail correspondence with Prof. Paolo Viotti, Associate Professor, Department of Hydraulics, Transport and Roads of La Sapienza University, Rome, I was invited to meet the professor and to visit the department. On 21<sup>st</sup> February 2013, I could visit the Department of Hydraulics, Transport and Roads and department of Environmental Engineering. The research group led by Prof. Paolo Viotti is undertaking a number of projects in the area of hydraulics and environmental engineering. They demonstrated various sophisticated instruments and experimental set-ups in the different laboratory divisions of environmental engineering and analysis. I could make a good discussion with the team regarding various research areas and opportunities. The team expressed their interest in students exchange programme at PG and PhD level with our Institution. After the visit to La Sapienza University, Rome, discussion with Professors there is going on related to the signing of MoU between our Institution and the said University. Also programmes with virtual data sharing between the said University and our Institution are being searched and discussed. If we can make an active initiative in this regard, we can make excellent research outcomes in the future.



Participants of ICREE 2013



With the research group, lead by Prof. Paolo Viotti of the La Sapienza University



# **REPORT OF IEEE SYMPOSIUM SERIES ON COMPUTATIONAL INTELLIGENCE-**

**2013**

**16 Tuesday-19 Friday April 2013**

**Grand Copthorne Waterfront Hotel, Singapore**

**Dr.R.Sasikumar**

Professor in Mechanical Engineering

The 4<sup>th</sup> IEEE Symposium Series on Computational Intelligence 2013 was organized by Society of IEEE-SSCI and Nanyang University of Technology (NUT), Singapore from 16 -19, April 2013 at Grand Copthorne Waterfront Hotel, Singapore, a five star Hotel with about 570 rooms and suites located Havelock Road. The main theme of the conference was Computational Integration. Computational Integration methods are increasingly applied to solve problems in diverse domains. Hence, IEEE SSCI 2013 was appropriately conceived to offer a forum to bring all such applied researchers together under one umbrella.

The symposium series consist of symposiums of 30 diverse domains, 5 workshops, and 2 international conferences. In addition, IEEE SSCI 2013 was very fortunate to have 54 top quality panel, keynote and tutorial speakers. Registration desk opened at 2 pm on 15<sup>th</sup> Monday, April 2013. A welcome dinner was organized by Nanyang University of Technology (NUT) in the same hotel at 7 PM on 15<sup>th</sup> Monday. The meeting was chaired by Prof. Bouchen-Meunier, who is the Honorary Chair of IEEE SSCI 2013. Prof. (Dr) P.N.Suganthan, General Chair, IEEE SSCI 2013, Nanyang University of Technology, Singapore welcomed the gathering and narrated the details of the conference. 49 key note addresses and 6 tutorials were also included in the conference. The conference dinner was scheduled on 17<sup>th</sup> April, 2013 followed by traditional dance of Singapore.

They received more than 1500 papers in 36 sub themes from all over the world and accepted 553 research papers after peer review. Researchers have presented their papers in 10 parallel sessions. 100 papers were selected for presentation in posters and presented in the open area of the hotel premises. The list of countries participated in the conference is given below.

<b>Sl. No</b>	<b>Countries Participated</b>	<b>No. of Research Papers</b>
1	USA	66
2	China	59
3	Japan	48
4	Uk	46
5	Singapore	44
6	Australlia	33
7	Taiwan	32

8	India	29
9	Europe	196
<b>Total</b>		<b>553</b>

My paper was included under the sub theme- Computational Intelligence in Production and Logistics Systems and selected for oral presentation. There were 19 papers presented in this sub theme. The session was chaired by Prof. Thomas Weise, University of Science and Technology, China and Co-chaired by Jorg Lassig, Alexandre Devert and Yi Mei.

The outcome of the SSCI -2013 are given below.

- Opportunity to interact with young scientist in science, technology and medical field
- Interaction with expert professors in the field of Computational Intelligence
- Understanding future research and funding challenges for Computational Intelligence
- Understanding advances in evolutionary Learning and Optimisation in Dynamic and uncertain environment
- Knowledge in Human experiments in Computational Intelligence
- Knowledge in Applications in Bioinformatics and data mining
- Application of CI in Production and logistics systems and
- Opportunity to visit Singapore, a dynamic city rich in contrast and colour with a harmonious blend of culture, cuisine arts and architecture.